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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
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| 09/653,055      | 09/01/2000  | Timothy J. Van Hook  | 0007057-0014/000122 B S | 5503             |

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COUDERT BROTHERS LLP  
333 SOUTH HOPE STREET  
23RD FLOOR  
LOS ANGELES, CA 90071

EXAMINER

MCCARTNEY, LINZY T

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2671

DATE MAILED: 09/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/653,055

Applicant(s)

VAN HOOK, TIMOTHY J.

Examiner

Linzy McCartney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 1 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,5,6,7,9,11,12,13,14,15 is/are rejected.
- 7) ☒ Claim(s) 2,8,10 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 7 and 15 recite "...subtracting Z pixels in the group that have the same fragment ID number from the Z value of the first pixel in the group..." It is unclear how the aforementioned Z pixels are being subtracted from the Z value of the first pixel in the group.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, 5, 9, 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,252,608 to Snyder et al (Snyder) in view of U.S. Patent No. 5,682,441 to Ligtenberg et al. (Ligtenberg).
  - a. Referring to claim 1, Snyder discloses "defining a plurality of tiles of data" (column 31, lines 12-14 and Fig. 15B), "identifying the number of primitives contained in a tile" (column 21, lines 38-40), and "storing said compressed tile in a memory" "column

43, lines 20-23). Since the purpose of compression is to reduce the amount of data, it would have been obvious to compress tiles only when the compressed tile is smaller than the tile being processed. Snyder does not explicitly disclose “defining a tile format table containing a status entry for each of said plurality of tiles” and “setting said status entry for said compressed tile in said tile format table”. However, Ligtenberg discloses “defining a tile format table containing a status entry for each of said plurality of tiles” (column 3, lines 49-52) and “setting said status entry for said compressed tile in said tile format table” (column 3, lines 53-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Snyder with the teachings of Ligtenberg because it would provide an efficient technique for modifying images in memory and updating the file to incorporate the modifications (Ligtenberg, column 3, lines 47-50).

b. Referring to claim 3, Snyder discloses “...compression is lossless” (column 35, lines 57-65).

c. Referring to claim 4, Snyder does not explicitly disclose “...wherein each of said tiles comprises a cache line”. However, Snyder discloses caching texture data in blocks of 8x8 size (column 20, lines 30-34) and sectioning data to be compressed into 8x8 “chunks” (column 35, lines 53-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to store the compressed data in the aforementioned blocks because it would facilitate efficient fetching and catching of the data (Snyder, column 20, lines 30-34).

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- d. Referring to claim 5, Snyder discloses "...wherein said pixels represent Z data" (column 64, lines 56-65).
  - e. Claim 9 is rejected with the rationale of the rejection of claim 1. Claim 9 is merely claim 1 recited as a system.
  - f. Claim 11 is rejected with the rationale of the rejection of claim 3. Claim 11 is merely claim 3 recited as a system.
  - g. Claim 12 is rejected with the rationale of the rejection of claim 4. Claim 12 is merely claim 4 recited as a system.
  - h. Claim 13 is rejected with the rationale of the rejection of claim 5. Claim 13 is merely claim 5 recited as a system.
3. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder in view of Ligtenberg as applied to claims 5 and 13 above and further in view of U.S. Patent No. 6,104,837 to Walker (Walker).
- a. Referring to claim 6, the modified method of Snyder as applied to claim 5 above discloses storing information equivalent to a plane equation (column 30, lines 9-20). Snyder does not explicitly disclose "each primitive having a fragment ID number, and storing the fragment ID for each pixel in each primitive." However, Walker discloses determining patches of adjoining pixels which have common depth values and assigning a common depth value to all pixels in a patch (Abstract). Inherently, every primitive in each of the aforementioned patches is also assigned the aforementioned common depth value along with the pixels that constitute each primitive. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify

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the teachings of Snyder with the teachings of Walker because to perform lossless compression the method of Snyder utilizes run-length encoding (column 35, lines 62-65) and quantization of data values facilitates run-length encoding (Snyder, column 1, lines 54-57).

b. Claim 14 is rejected with the rationale of the rejection of claim 6. Claim 14 is merely claim 6 recited as a system.

***Allowable Subject Matter***

4. Claims 2, 8, 10, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

ltm

September 3, 2002

A handwritten signature in black ink, appearing to read "Mark Zimmerman", with a long horizontal flourish extending to the right.

MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600